Work Order ID 101105 *101105*

April-30-13 2:49:23 PM

Item ID: D3646-1 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Arm

Start Date: 4/30/13 **Start Qty:** 4.00 *4* **Cust Item ID:**
Required Date: 4/30/13 **Req'd Qty:** 4.00 *4* **Customer:**
Reference:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** MLS **Date:** 13-05-01 **Tooling:** ______ **Date:** ______
QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

Draw Nbr	Revision Nbr
D3646	Rev C

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
100 *100* Brake NC / Brake NC	NC BRAKE **Memo** 1-Punch to length as per Dwg D3646 & template DT8958	0.00 / 0.00				4	SAD	13-10-28	
110 *110* Small Fab / Small Fab	Small Fab **Memo** 1-Deburr	0.00 / 0.00				4	SAD	13-10-28	
120 *120* QC / Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 / 0.00	DAS 27 9-89 13 10 29			4			

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________	DISPOSITION	AGAINST DEPARTMENT/PROCESS
Part No. ____________	Rework ☐	Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
NCR No. ____________	Scrap ☐	Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
	Use-as-is ☐	Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
	Work Order Update ☐	Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	☐									
Equip/Tooling	☐									
Operator	☐									
Material	☐									
Setup	☐									
Other	☐									
Process	☐									
Supplier	☐									
Training	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

- ☐ Bending
- ☐ Centre Not Concentric to O/S
- ☐ Cracks
- ☐ Crushed/Crimped
- ☐ Cuffs
- ☐ Heat Treat
- ☐ Inspection Strip in Tube
- ☐ Ripples in Bend
- ☐ Torque Waves in Extrusion
- ☐ Turning Sequence
- ☐ Wave/Twist in Tube

General

- ☐ Bend
- ☐ BOM/Route
- ☐ Broken/Damaged
- ☐ Burrs
- ☐ Contamination
- ☐ Countersink
- ☐ Cut Too Short
- ☐ Drill Holes
- ☐ Drawing
- ☐ Finish
- ☐ Folio
- ☐ Grain
- ☐ Hardware
- ☐ Inspection Incomplete
- ☐ Instructions Incomplete/Unclear
- ☐ Maintenance
- ☐ Mislabeled
- ☐ Misread
- ☐ Offset
- ☐ Out of Calibration
- ☐ Out of Sequence
- ☐ Outside Dimensions
- ☐ Ovalized
- ☐ Over/Under tolerance
- ☐ Part Incorrect
- ☐ Part Lost/Missing
- ☐ Part Moved
- ☐ Positioned Wrong
- ☐ Power Loss/Surge
- ☐ Pressure/Forced
- ☐ Temperature/Cure
- ☐ Weld
- ☐ Wrong Stock Pulled
- ☐ Other ____________

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Order ID 101105

April-30-13 2:49:23 PM

101105

Item ID: D3646-1

Revision ID:

Item Name: Arm

Start Date: 4/30/13 **Start Qty:** 4.00 *4*

Required Date: 4/30/13 **Req'd Qty:** 4.00 *4*

Reference:

Accept *N900040100*

Setup Start *NS1* Stop *NS2*

Cust Item ID:

Customer:

Run Start *NR1* Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Powdercoat Powder Coating	Black Sandtex(Ref 4.3.5.7) per QSI005 4.3 M117338	0.00				4.	ϕ	13-10-29.	DAS 34 9-89
	Memo START TIME: 2:15 OVEN TEMPERATURE: 220 FINISH TIME: 2:45.	0.00							
140 *140* QC Quality Control	QC3- Inspect Part Finish	0.00 DAS 27 9-89				4			
	Memo	0.00 13 10-30							
150 *150* Packaging Packaging	Identify as per dwg & Stock Location: ST227	0.00				4x	DAS 28 9-89	13-10-30	
	Memo	0.00							

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ______________________

Part No. ______________________

NCR No. ______________________

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 101105

April-30-13 2:49:23 PM

101105

Item ID:	D3646-1	**Accept**	*N900040100*
Revision ID:			
Item Name:	Arm		

Setup **Start** *NS1*
Stop *NS2*

Start Date:	4/30/13	**Start Qty:**	4.00	*4*	**Cust Item ID:**
Required Date:	4/30/13	**Req'd Qty:**	4.00	*4*	**Customer:**
Reference:					

Run **Start** *NR1*
Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________
QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC21- Final Inspection - Work Order Release	0.00							
160 QC Quality Control	**Memo**	0.00				____	____	13-10-31	

UMF 13-10-31

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________________

Part No. ____________________

NCR No. ____________________

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	**General**			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ____
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Picklist Print

April-30-13 2:49:23 PM

Work Order ID: 101105

Parent Item: D3646-1 | **Start Date:** 4/30/13 | **Required Date:** 4/30/13

Parent Item Name: Arm | **Start Qty:** 4.00 | **Required Qty:** 4.00

Comments: IPP Rev. A new issue 07.07.25 EC verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304TR0.500W.035 304 RD Tube .500 x .035W		Purchased	No			100	f	335.4143	**1.98**	**8.336842**	SAD	13-10-28	

Location	Loc Qty	Loc Code
MAT017	335.41433	
120633	70.1979	
121848	29.92344	
123303	187.1315	
123449	48.16149	

126922 8,3368

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

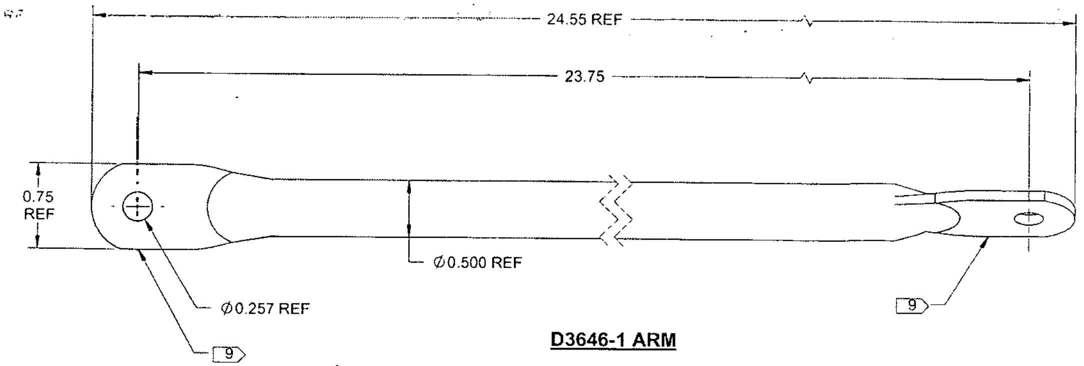
QA Closed: Date:

Work Order: ____________	**DISPOSITION**	**AGAINST DEPARTMENT/PROCESS**			
Part No. ____________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ____________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

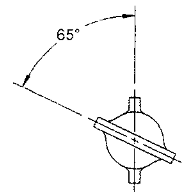
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

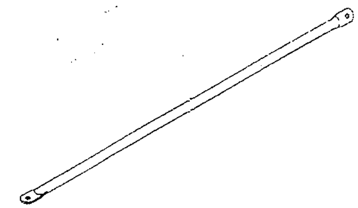
FAULT CATEGORY

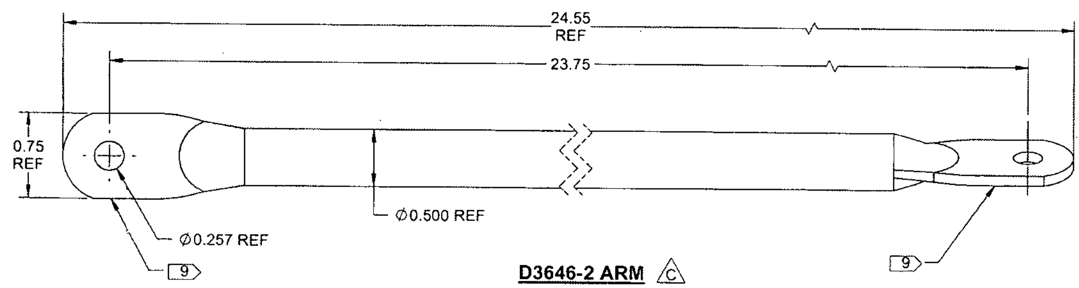
Landing Gear	**General**			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		



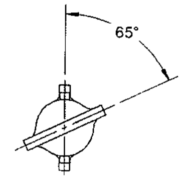
D3646-1 ARM

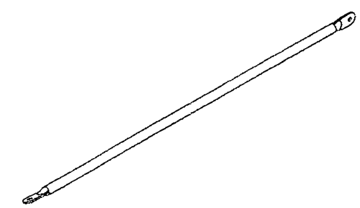






D3646-2 ARM (C)





RELEASED 2011-07-12

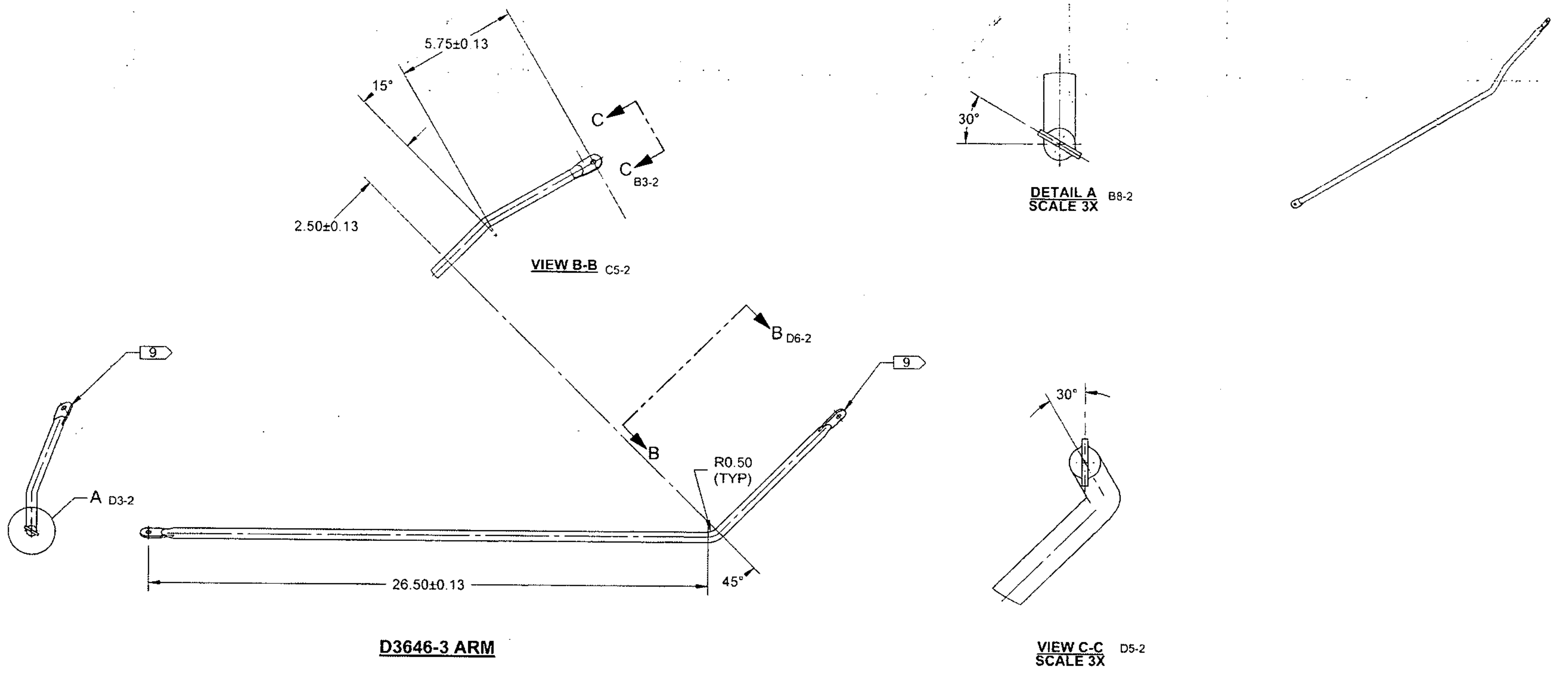
NOTES:
1) MATERIAL: AISI 304/316 SS TUBE Ø0.500 X 0.035 WALL PER ASTM A213/A269 OR ASME A213 (REF DART SPEC. M304TR0500W.035)
2) FINISH: POWDER COAT "BLACK SANDTEX" (4.3.5.7) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3646-X" AND B/N "BXXXXX" PER DART QSI 044 6.1 USING REMOVABLE TAG
7) WEIGHT: 0.38 lbs
8) DELETED AT REV. C (C)
9) PUNCH BOTH ENDS PER SPEC CONTROL DWG D2727

SHOP C... RETURN TO ENGINEERING UNCONTROLLED C... SUBJECT TO A... WITHOUT NOTICE WORK ORDER NO 101105 MCJ 13-05-01

REV.	DESCRIPTION	BY	DATE
C	ADD-2 & -4 FOR LHS INSTALLATION. DELETE REFERENCES TO TEMPLATES (NOTE 8) PER SHOP REQUEST.	AJS	11.07.11
B	REFORMAT DWG, ANGLE 65° WAS 45° (ZN C3-1), ADD IDENTIFICATION TAG (ZN A8-1, A8-2)	CP	09.06.04
A	NEW ISSUE	MB	07.06.06

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	
CHECKED	[signature]	DRAWING NO. D3646 — REV. C — SHEET 1 OF 3
MFG. APPR.	[signature]	
APPROVED	[signature]	TITLE ARM — SCALE NTS
DE APPR.	[signature]	
DATE	11.07.11	

10110F



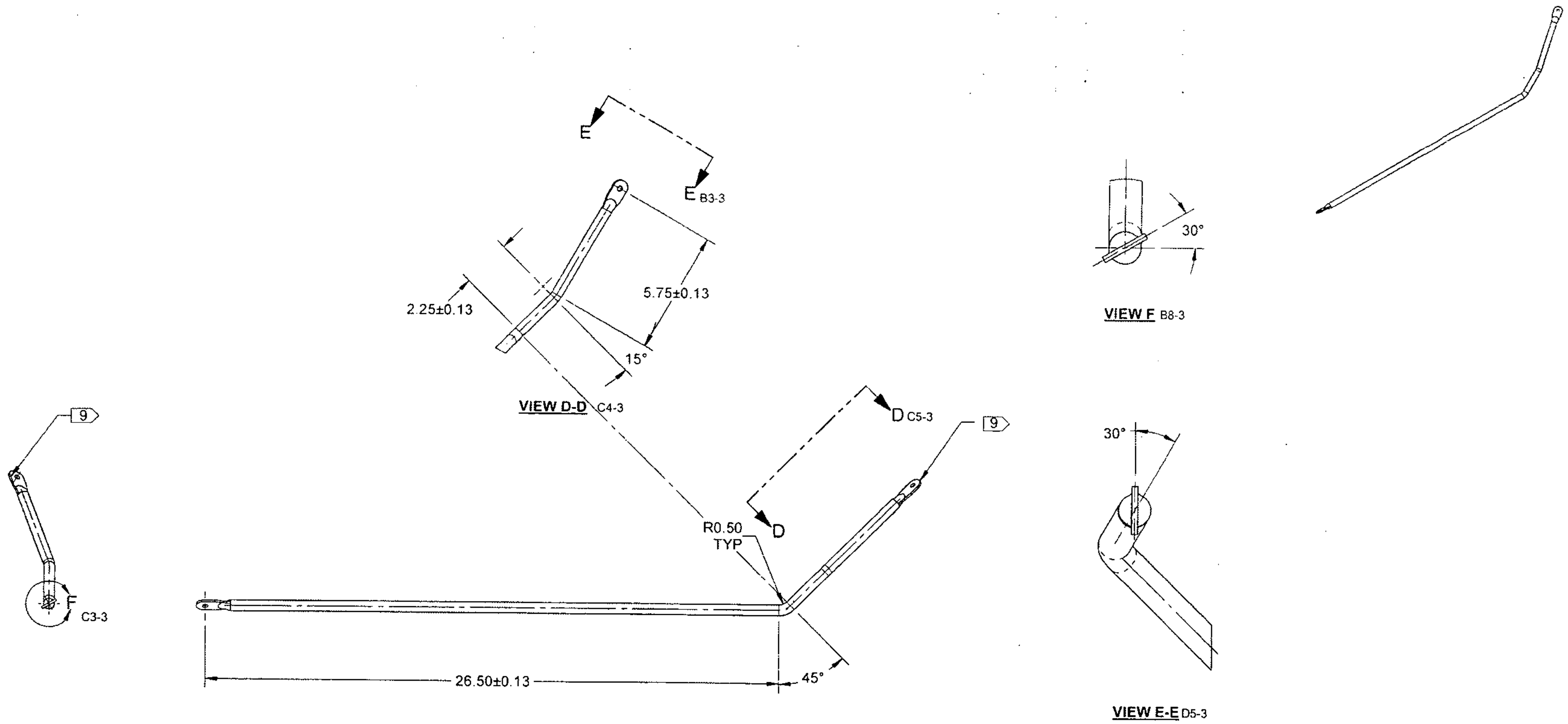
RELEASED 2011-07-13

NOTES:

1) MATERIAL: AISI 304/316 SS TUBE Ø0.500 X 0.035 WALL PER ASTM A213/A269 OR ASME A213 (REF DART SPEC. M304TR0500W.035)
2) FINISH: POWDER COAT "BLACK SANDTEX" (4.3.5.7) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3646-3" AND B/N "BXXXXX" PER DART QSI 044 6.1 USING REMOVABLE TAG
7) WEIGHT: 0.57 lbs
8) DELETED AT REV C. (C)
9) PUNCH BOTH ENDS PER SPEC CONTROL DWG D2727

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	
CHECKED	[signature]	DRAWING NO. D3646 — REV. C — SHEET 2 OF 3
MFG. APPR.	[signature]	
APPROVED	[signature]	TITLE ARM — SCALE NTS
DE APPR.	[signature]	
DATE	11.07.11	

101105



D3646-4 ARM

RELEASED 2011-07-12

NOTES:
1) MATERIAL: AISI 304/316 SS TUBE $\varnothing$0.500 X 0.035 WALL PER ASTM A213/A269 OR ASME A213 (REF DART SPEC. M304TR0500W.035)
2) FINISH: POWDER COAT "BLACK SANDTEX" (4.3.5.7) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3646-4" AND B/N "BXXXXX" PER DART QSI 044 6.1 USING REMOVABLE TAG
7) WEIGHT: 0.57 lbs
8) DELETED AT REV C. C
9) PUNCH BOTH ENDS PER SPEC CONTROL DWG D2727

DESIGN	MB	DART AEROSPACE LTD, HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	
CHECKED	[signature]	DRAWING NO. D3646 — REV. C — SHEET 3 OF 3
MFG. APPR.	[signature]	
APPROVED	[signature]	TITLE ARM — SCALE NTS
DE APPR.	[signature]	
DATE	11.07.11	

DART AEROSPACE LTD

Description: Arm	Work Order: 101105
Inspection Drawing: D3646-1 Rev: C	Part Number: D3646-1

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
24.55	+/-0.030	24.55	✓		M-T	SAD-1
23.75	+/-0.030	23.75	✓		M-T	SAD-1
0.257	+0.006 -0.001	0.257	✓		Vern	SFab-08
65°	+/-1/2	65°	✓		Angel level	SFab-05
0.75	+/-0.030	0.75	✓		Vern	SFab-08

Measured by: SAD	Checked By: [signature]	QC inspector: DAS 27 9-89	Engineering Approval (*if necessary*):
Date 13-10-28	Date 13/10/28	Date 13 10 29	Date